

Appl. No. 10/002,063
Amdt. dated 9/15/05
Reply to Office Action of 6/16/06

PATENT
Docket: 000067

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A method for searching for pilots in a wireless communication system, comprising:

searching in a first stage over a designated code space for peaks in a received signal and providing a set of detected peaks;

forming in a second stage a plurality of dwell windows for the detected peaks, wherein the dwell windows have variable sizes and cover variable numbers of detected peaks, ~~both the variable sizes and the variable numbers of detected peaks~~ being determined based on locations of the detected peaks in the designated code space; and

searching over the dwell windows for peaks in the received signal and providing a set of one or more candidate peaks.

2. (Previously presented) The method of claim 1, wherein the designated code space comprises all or a portion of a pseudo-random noise (PN) sequence used to generate the pilots.

3. (Previously presented) The method of claim 1, wherein the forming the plurality of dwell windows for the detected peaks includes

placing an individual search window on each detected peak, and
combining overlapping individual search windows.

4. (Previously presented) The method of claim 3, wherein the number of peaks to be returned for each dwell window is determined based on the number of individual search windows combined to form the dwell window.

5. (Original) The method of claim 3, further comprising:

sorting the detected peaks based on their locations in the designated code space.

6. (Previously presented) The method of claim 3, wherein the forming the plurality of dwell windows for the detected peaks further includes

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limiting the number of overlapping individual search windows to be combined for each dwell window.

7. (Previously presented) The method of claim 3, wherein the forming the plurality of dwell windows for the detected peaks includes

limiting the number of overlapping individual search windows to be combined for each dwell window based on the number of peaks provided by the search over the dwell window.

8. (Previously presented) The method of claim 3, wherein the overlapping individual search windows are combined such that overlap between the dwell windows is minimized.

9. (Previously presented) The method of claim 3, wherein the overlapping individual search windows are combined such that larger detected peaks are biased toward the center of the dwell windows.

10. (Previously presented) The method of claim 1, wherein the dwell windows are non-overlapping.

11. (Previously presented) The method of claim 3, wherein each individual search window has a predetermined size.

12. (Previously presented) The method of claim 11, wherein the predetermined size of each individual search window is 5 PN chips or less.

13. (Original) The method of claim 3, wherein the individual search window is centered at each detected peak.

14. (Original) The method of claim 1, wherein the dwell windows are formed such that each detected peak is included in only one dwell window.

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15. (Original) The method of claim 1, wherein the communication system is a CDMA system.

16. (Original) The method of claim 15, wherein the CDMA system conforms to IS-95 or cdma2000 standard.

17. (Original) A method for searching for pilots in a wireless communication system, comprising:

searching over a designated code space for peaks in a received signal and providing a set of detected peaks;

forming a plurality of dwell windows for the detected peaks by placing an individual search window of a particular size on each detected peak, and combining overlapping individual search windows, wherein the number of peaks to be returned for each dwell window is equal to the number of individual search windows combined to form the dwell window; and

searching over the dwell windows for peaks in the received signal and providing a set of one or more candidate peaks selected from among the peaks returned for the dwell windows.

18. (Currently Amended) A method for searching for pilots in a CDMA communication system, comprising:

performing a plurality of sets of searches for peaks in a received signal in a plurality of stages, wherein each set of searches is performed over a respective set of search windows, and wherein at least one set of searches for at least one stage includes search windows having variable sizes and covering variable numbers of expected peaks, ~~both the variable sizes and the variable numbers of detected peaks~~ being determined based on locations of expected peaks in the received signal.

19. (Previously presented) The method of claim 18, further comprising:
returning variable numbers of peaks for the variable-size search windows.

20. (Previously presented) The method of claim 18, further comprising:

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forming a first set of search windows with equal-size, non-overlapping windows covering a designated code space.

21. (Previously presented) The method of claim 18, further comprising:
forming the variable-size search windows by combining overlapping fixed-size windows placed on peaks detected by a first set of searches.

22. (Currently Amended) A demodulator in a wireless communication system, comprising:

a searcher operative to search over a designated code space for peaks in a received signal for a first stage and to provide a set of detected peaks; and

a controller operative to form a plurality of dwell windows for the detected peaks for a second stage, wherein the dwell windows have variable sizes and cover variable numbers of detected peaks, both the variable sizes and the variable numbers of detected peaks being determined based on locations of the detected peaks in the designated code space, and wherein the searcher is further operative to search over the dwell windows for peaks in the received signal for the second stage and to provide a set of one or more candidate peaks.

23. (Original) The demodulator of claim 22, further comprising:
one or more finger processors operative to process and acquire the set of one or more candidate peaks.

24. (Original) The demodulator of claim 22, wherein the controller is operative to place an individual search window on each detected peak, and combine overlapping individual search windows to form the dwell windows.

25. (Previously presented) The demodulator of claim 22, wherein the designated code space includes all or a portion of a pseudo-random noise (PN) sequence used to generate pilots.

26. (Currently amended) A CDMA terminal device, comprising:

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a searcher operative to search over a designated code space for peaks in a received signal for a first stage and to provide a set of detected peaks; and

a controller operative to form a plurality of dwell windows for the detected peaks for a second stage, wherein the dwell windows have variable sizes and cover variable numbers of detected peaks, both the variable sizes and the variable numbers of detected peaks being determined based on locations of the detected peaks in the designated code space, and wherein the searcher is further operative to search over the dwell windows for peaks in the received signal for the second stage and to provide a set of one or more candidate peaks.

27. (Original) The CDMA terminal device of claim 26, further comprising:

one or more finger processors operative to process and acquire the set of one or more candidate peaks.

28. (Original) The CDMA terminal device of claim 26, wherein the controller is operative to

place an individual search window on each detected peak, and
combine overlapping individual search windows to form the dwell windows.

29. (Previously presented) The CDMA terminal device of claim 26, wherein the designated code space includes all or a portion of a pseudo-random noise (PN) sequence used to generate pilots.

30. (Previously presented) The method of claim 1, further comprising:

determining the number of peaks to return for each dwell window based on the number of the number of detected peaks covered by the dwell window.

31. (Previously presented) The method of claim 17, wherein the forming the plurality of dwell windows for the detected peaks comprises

limiting the number of overlapping individual search windows to be combined for each dwell window to a predetermined number.

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32. (Previously presented) The method of claim 17, wherein the dwell windows are non-overlapping.

33. (Previously presented) The method of claim 17, wherein the individual search windows are combined such that overlap between the dwell windows is minimized or avoided.